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FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter Of: ) GEN Docket No. 90-314  
Amendment of the Commission's ) ET Docket No. ~~92-100~~  
Rules to Establish New Personal ) RM-7140, RM-7175, RM-7617,  
Communications Services ) RM-7618, RM-7760, RM-7782,  
 ) RM-7860, RM-7977, RM-7978,  
 ) RM-7979 & RM-7980

**COMMENTS OF TELOCATOR ON 1850-1990 MHz  
PERSONAL COMMUNICATIONS SERVICES**

**TELOCATOR, THE PERSONAL  
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## SUMMARY

Telocator, the Personal Communications Industry Association, represents the full range of participants in new and existing wireless services. Its members come from all sectors of the telecommunications industry, including the paging, cellular, cable television, local and interexchange telephone company, specialized mobile radio, switch manufacturing, and computer industry segments, among others. The interests of these companies span the entire gamut of existing and emerging PCS offerings. Currently, Telocator has over 490 members representing 1200 companies.

On behalf of its members, Telocator strongly endorses the Commission's Notice as a timely and important step towards realizing the public benefits promised by emerging PCS. As we stated in our comments for the Commission's December, 1991, en banc hearing on PCS, many categories within the family of PCS can not proceed without prompt allocation of spectrum and establishment of rules for the assignment and use of that spectrum. As the Notice correctly concludes, there is a real and urgent need to advance this critical agenda. Telocator's PCS Demand Survey, consistent with other consumer studies, projects over 60 million new PCS users in the United States within ten years. Moreover, PCS will be an international market and, unless a domestic spectrum allocation can be made for PCS, the U.S. is in jeopardy of losing its leadership position in the international wireless telecommunications marketplace.

Telocator concurs with the Commission's definition of PCS as a family of services, and the exclusion of broadcast services and fixed services (other than fixed service ancillary to the mobile PCS, e.g., wireless local loop) from the category. The Commission's proposed flexibility in the use of spectrum licensed for PCS is an appropriately market driven policy and will further the Commission's goals of speed of deployment, diversity of service, and competitive delivery of PCS.

The Notice proposes spectrum allocations, rules, and policies for licensed and unlicensed PCS services in the 1850-1990 MHz band.<sup>1</sup> The Notice also identifies universality, speed of deployment, diversity, and competition as foremost goals, and proposes a regulatory scheme based on competition and service flexibility to achieve the optimum balance of those values. The Notice thus provides a comprehensive and well-reasoned backdrop for expeditiously moving new PCS from the realm of experimentation into the hands of the American public.

Telocator's members have conducted an extensive and comprehensive review of the Notice's proposed PCS rules. In order to assist the Commission, the association has developed a number of basic PCS policy recommendations that reflect the consensus of its diverse membership. Specifically, Telocator

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<sup>1</sup> The Notice also proposes to reallocate the three unused 900 MHz spectrum bands and to develop rules for narrowband PCS services. Because the broadband PCS policy issues differ markedly from narrowband services, however, Telocator has filed separate comments on the narrowband aspects of the rulemaking, and herein addresses only 2 GHz broadband PCS services.

urges the Commission to adopt PCS rules consistent with the following principles:

- The entire 1850-1990 MHz band should be dedicated for terrestrial PCS, and any spectrum not immediately allocated should be held in reserve for future growth in PCS.
- The 1910-1930 MHz should be allocated for unlicensed PCS devices.
- No separate allocation for wireless local loop services is warranted.
- All qualified applicants should be allowed to participate in new PCS allocations.
- National PCS service areas and service areas based upon LATAs would not serve the public interest.
- Stringent anti-speculation measures are needed to deter licensing abuses and to encourage participation of qualified applicants.
- A level regulatory playing field must be ensured for all providers of existing and emerging PCS services.
- Flexible technical regulations are warranted that allow the industry to pursue standards as the need arises.

Telocator's comments reflect the collective efforts of the PCS industry to achieve a broad based consensus on important regulatory issues and to hasten the arrival of a new era in mobile communications.<sup>2</sup>

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<sup>2</sup> In reaching these consensus positions, great care was taken to insure that the wide ranging interests and concerns of each of the industry segments represented in the Telocator PCS membership were fairly addressed. In fact, due to the diversity of interests represented in the PCS Section, as well as in the general membership, Telocator employed extraordinary procedural safeguards to ensure that all positions reflected a consensus. Telocator's priority in this regard was to enable the Commission to rely on the positions articulated in its comments as having the broad based support of the industry overall. A description of the Telocator PCS Section's consensus and voting procedures can be found in the "Report of Thomas A. Stroup, President,

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COMMENTS OF TELOCATOR ON 1850-1990 MHz  
PERSONAL COMMUNICATIONS SERVICES

Telocator, the Personal Communications Industry Association, herewith submits its comments in response to the Commission's Notice of Proposed Rule Making on Personal Communications Services ("PCS").<sup>3</sup> As detailed below, Telocator and its members see this proceeding as a landmark development which can open the door to enormous advances in the diversity and capabilities of wireless services enjoyed by the American public. In order to assist the Commission in its challenging task, Telocator sets forth below basic principles, built upon consensus achieved among the full, diverse range of interests at work in PCS development, that can help form the foundation for the nation's wireless future.

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Telocator," submitted for the record of the Commission's December 5, 1991 En Banc Hearing on PCS, page 4. Since those comments were filed, the steering committee has expanded from eight to ten positions. Seven represent specific segments of the industry and three are elected from the PCS membership at large.

<sup>3</sup> Amendment of the Commission's Rules to Establish New Personal Communications Services, FCC 92-333 (August 14, 1992) ["Notice"].

**I. THE ENTIRE 1850-1990 MHz BAND SHOULD BE DEDICATED FOR PERSONAL COMMUNICATIONS SERVICES**

The Commission's Notice proposes several spectrum allocations in the 1850-1990 MHz band for broadband PCS offerings. The Notice requests comment on individual licensed PCS allocations in the paired spectrum from 1850-1910/1930-1990 MHz.<sup>4</sup> The Notice also tentatively recommends an allocation of 20 MHz from 1910-1930 MHz for unlicensed PCS devices and invites comment on a 10 MHz allocation for local exchange telephone company ("LEC") provision of wireless service.

Telocator believes the allocations proposed in the Notice are a momentous step forward in realizing the public benefits of PCS. Telocator has been an active advocate of PCS spectrum allocations in the 1850-1990 MHz band for a variety of reasons, including relative equipment costs and international compatibility.<sup>5</sup> To this end, Telocator's PCS subcommittee

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<sup>4</sup> The Commission, appropriately, has placed a high priority on insuring that this allocation does not adversely impact the current incumbents of the spectrum. ET Docket 92-9 proposed a negotiated relocation program and protections for these incumbents. Telocator, in its comments in that proceeding, presented principles to balance the need for access to this spectrum for the implementation of new PCS offerings and the requirements of incumbent, fixed microwave users. We were gratified by the apparent inclusion of much of Telocator's input in the Commission's decision on September 17, 1992, adopting a Report and Order in ET Docket 92-9. Further comment on the Commission's plan for accommodating incumbents is more appropriately reserved for and will be made in filing on the Further Notice of Proposed Rulemaking in ET Docket 92-9.

<sup>5</sup> See, e.g., Notice at ¶13.

developed extensive demand estimates<sup>6</sup> and modelled an array of deployment scenarios to reach specific conclusions regarding the total amount of spectrum necessary to PCS services.<sup>7</sup> These reports demonstrate that the full 140 MHz of spectrum in the 1850-1990 MHz band should be allocated for terrestrial, broadband PCS service. Consequently, any spectrum not immediately made available for either licensed or unlicensed PCS should be held in reserve to meet future PCS growth needs.

Telocator also supports the specific recommendation in the Notice to allocate the 1910-1930 MHz band for unlicensed PCS devices. Currently the 1850-1990 MHz band is channelized into two-way bands from 1850-1910 and 1930-1990 MHz, separated by a 20 MHz one-way allocation to achieve 80 MHz spacing between the existing transmit and receive channels. Because this central band is "relatively lightly loaded" and because the band "can be made available for unlicensed operations with minimal impact on the private fixed microwave community,"<sup>8</sup> Telocator supports the proposed allocation. With this allocation, unlicensed PCS devices can be offered immediately to address a substantial pent up demand.

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<sup>6</sup> PCS Demand Forecast, Telocator Marketing and Consumer Affairs Committee (May 1, 1992) (Attached as Appendix A).

<sup>7</sup> Telocator Spectrum Estimates for PCS Report, Telocator PCS Technical and Engineering Committee (May 28, 1992) (Attached as Appendix B).

<sup>8</sup> Notice at ¶43.

As a final matter, the Commission has solicited comment on whether 10 MHz should be allocated for wireless local access.<sup>9</sup> Telocator, however, does not believe a separate 10 MHz allocation in the 1850-1990 MHz band is warranted for wireless local loop service. Wireless local access services fit within the broad definition of PCS, so that competing service providers should be able to offer fixed wireless local loop services on an ancillary basis within their general PCS allocations. Furthermore, Telocator is advocating an open entry scheme encouraging all qualified applicants, including local exchange companies, to apply for new PCS licenses. Thus, to the extent that demand exists for wireless local access to telephone company (or any other network) facilities, such services can and should be offered by PCS licensees and the available spectrum should not be fragmented into service specific segments that ultimately reduce carriers' flexibility.

**II. LICENSING RULES AND POLICIES FOR 2 GHz PCS SERVICES SHOULD ENCOURAGE THE PARTICIPATION OF QUALIFIED APPLICANTS**

Telocator believes that licensing rules and policies developed for PCS services should encourage the participation of qualified entities. First, the Commission should develop licensing policies that neither prefer nor discourage any qualified applicant. Second, license areas should be based on rational boundaries and should not severely limit entry

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<sup>9</sup> Notice at ¶75.

opportunities. Third, 10 year license terms and renewal expectancies should be employed to promote licensee stability essential to ensuring qualified entry. Finally, in light of past mobile licensing problems, anti-speculation rules must be adopted to limit insincere applicants.

**A. The Commission Should Adopt a Policy of Not Preferring or Excluding Any Qualified Applicant for 2 GHz PCS Licenses**

Telocator believes that all qualified applicants should be permitted to pursue new PCS spectrum opportunities. Individual Telocator members will argue what should or should not constitute a qualified applicant from their own perspectives. The sole exception is that Telocator continues its longstanding and strong opposition to any prohibition on the participation of cellular carriers in new spectrum allocations.

As the Commission observed,<sup>10</sup> cellular carriers have transformed mobile service far beyond what was originally conceived. Cellular carriers, as evidenced by the wide range of PCS offerings on cellular spectrum and the number of experimental PCS filings, can add innovation and diversity to 2 GHz PCS. Cellular operators also have existing plant, personnel, and resources available to rapidly deploy new 2 GHz services upon authorization. Cellular carriers, like other existing providers of telecommunications services, have experience, resources, and expertise useful in bringing PCS to its fullest potential.

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<sup>10</sup> Notice at ¶2.

In addition, if, notwithstanding Telocator's view that such an allocation is unwarranted, the Commission elects to create a 10 MHz allocation for wireless local loops, Telocator also opposes any restrictions on applying for such spectrum. Although the Commission explicitly states that the allocation would not be a "set-aside," the proposal appears in the context of a discussion on whether to permit LECs to acquire spectrum within their local exchange territories.<sup>11</sup> Policies preferring or excluding qualified applicants disserve the public interest by limiting both diversity and competition.

The Notice also invites comments on limitations on the total amount of spectrum acquired or utilized by PCS operators. Consideration of such limitations is motivated by the Commission's goal of promoting competition among PCS suppliers and between PCS and other telecommunications services. In this respect, Telocator offers the following views: First, no multiple ownership limits should exist where there is no overlap in service areas. Second, there should be no restrictions on a single operator holding licenses for both 900 MHz narrowband PCS and 2 GHz broadband PCS within the same service area. Third, there should be no restrictions on a single operator providing both licensed and unlicensed 2 GHz services or devices. None of these three scenarios would allow undue market concentration; any prohibition against them would only serve to possibly exclude

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<sup>11</sup> Notice at ¶76.

firms with the expertise, wherewithal and infrastructure to launch viable services.

**B. National PCS Service Areas and LATA-Based Service Areas Are Not In the Public Interest**

The Commission has invited comments on a number of options for PCS service areas. In this regard, Telocator does not believe that either nationwide licensing or licensing areas based on LATAs are consistent with the Commission's general approach to promote diversity and reliance upon the marketplace realities. Telocator's specific reasons for its opposition to nationwide licenses and LATA-based licensing are given below.

The Commission has solicited comment on national PCS licensing because granting licenses for relatively larger regions may:

[F]acilitate regional and nationwide roaming; allow licensees to tailor their systems to the natural geographic dimensions of PCS market; reduce the cost of interference coordination between PCS licensees; and simplify the coordination of technical standards.<sup>12</sup>

In particular, the Notice states that national licenses "maximize economies of scale and scope as well as the other benefits of large service areas. . ."<sup>13</sup> Finally, the Commission suggests that national licensees may be "better able to compete in foreign markets. . ."<sup>14</sup>

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<sup>12</sup> Notice at ¶59.

<sup>13</sup> Notice at ¶60.

<sup>14</sup> Notice at ¶60.

Telocator believes that these purported benefits are either illusory or outweighed by the offsetting severe curtailment of entry opportunities inherent in national licensing. As discussed in Section V.B, intersystem compatibility issues -- such as interference coordination, roaming, and technical standards -- can and are being developed by industry standards bodies as the need arises, and a single nationwide licensee is not the best means to that goal. In fact, while assignment of a single nationwide license would accomplish the establishment of a de facto technical standards for PCS, it would do at the expense of technical experimentation and diversification. Such a strategy creates the significant potential that the industry will commit itself early to a technology which is not, in fact, the optimum technology for PCS, and reduces the opportunity for marketplace experience to identify and drive PCS technology to that technology which best meets the marketplace's needs.

Furthermore, Telocator believes that achieving lower prices, service diversity, and the other benefits of competition -- as well as the ability of domestic industries to compete internationally -- would be enhanced by increasing entry opportunities rather than by restricting them. As the Commission stated in the Notice, "smaller service areas may permit a broader participation by firms of all sizes in the PCS market."<sup>15</sup> This, in turn, "may produce a greater diversity and degree of technical and service innovation than would be expected from a few large

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<sup>15</sup> Notice at ¶59.

firms."<sup>16</sup> Thus, Telocator does not believe that national service would serve the public interest.

Telocator also opposes a licensing scheme based on LATAs. The Commission has suggested LATAs as potential licensing areas because "this option may facilitate efficient integration of PCS into the local telephone infrastructure."<sup>17</sup> As AT&T, the principle architect of the LATAs, noted, however, LATAs do not bear any relationship to markets for mobile services:

[T]he technology, economics, customer requirements, and competitive implications of mobile radio services are so different from those of landline services that it would be irrational and contrary to any reasonable interpretation of the Decree or antitrust policies to confine the BOCs' mobile radio systems to the precise LATAs established for landline service.<sup>18</sup>

Similarly, the regional Bell Operating Companies have noted that "[l]andline LATAs do not reflect the entirely different characteristics of the services designed to reach moving vehicles or other mobile units."<sup>19</sup> Consequently, basing mobile service

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<sup>16</sup> Notice at ¶59.

<sup>17</sup> Notice at ¶60.

<sup>18</sup> AT&T Response to Comments and Objections Relating to the Proposed LATA Boundaries at 26-27 (November 23, 1982).

<sup>19</sup> The Bell System's Further Memorandum in Support of its Request for a Ruling that the Regional Companies are Permitted to Provide Public Radio Service Without Regard to LATA Boundaries at 4 (May 9, 1983).

licensing areas on LATAs would not appear to be rationally related to marketplace realities.<sup>20</sup>

**C. 10 Year License Terms For PCS Are Warranted**

Telocator supports the Notice's proposed 10 year license term for PCS services in conjunction with a renewal expectancy in order to allow new PCS providers to establish economically viable systems. This level of license stability is essential to enable new entrants to justify the significant investment in PCS infrastructure. In addition, a 10 year license term would generally be consistent with other mobile services, including cellular.

**D. The Commission Should Adopt Stringent Lottery Reforms to Deter Speculation for 2 GHz PCS Licenses**

The Commission is correct in focusing on lotteries, strengthened and improved by the addition of antispeculation safeguards, as the licensing method for PCS. Focusing on qualified lotteries is the best means to ensure there is no delay in the licensing process and will speed deployment of service to the public. Licensing problems in cellular authorizations and other radio services have demonstrated the need to adopt stringent regulations to limit the influx of speculative "mass-

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<sup>20</sup> Similarly, the failure to conform cellular licensing areas to the LATAs does not appear to have significantly affected interconnection of cellular systems with the local exchange network.

market" applications by entities motivated by prospects of immediate financial gain rather than service to the public. Indeed, the experience with cellular and 220-222 MHz licensing has demonstrated that measures originally viewed as strict may not significantly affect the numbers of speculative applications filed. Consequently, Telocator recommends adopting a full panoply of measures designed to combat speculation.

The Notice suggests a number of ways of limit the number of insincere applications filed for PCS authorizations. Telocator's specific recommendations on each proposal are as follows:

- Financial Qualification Criteria. Due to the relatively high cost of developing a microcellular PCS infrastructure, requiring firm financial commitments at the initial application stage is critical to assuring that applicants are in a position to achieve actual deployment of PCS.
- Construction Commitments and Deadlines. In order to ensure rapid deployment of PCS services and to limit the possibility of spectrum hoarding, the Commission must mandate aggressive construction commitments and deadlines for the offering of PCS service.
- Filing Fees. In order to reduce potential speculative gain, Telocator believes the Commission should adopt the highest non-refundable legally defensible filing fees.<sup>21</sup>

For PCS, which has been attended with considerable media interest, speculation problems can be expected to be even worse than that experienced in cellular and 220-222 MHz private radio

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<sup>21</sup> Applicant fees based on the number of call signs or facilities, as proposed, however, are problematic in one respect. Without any commitment to construct facilities, no applicant would propose (or pay for) more than one call sign or base station in an initial application, regardless of market size. A fee schedule like the Commission is proposing must be tied to stringent construction and service requirements.

licensing. Adoption of a full complement of antispeculation measures is thus critical to stemming the tide of insincere applications.

Pre-lottery settlements with disclosure prior to the lottery process should, however, be permitted. When the cellular rules were amended to bar pre-lottery settlements among nonwireline applicants, there did not appear to be any discernable diminution of the number of applications filed. At the same time, barring pre-lottery agreements precluded the possibility of competing applicants arriving at legitimate settlements, which would speed the licensing process and the delivery of service to the public. Consequently, Telocator believes that pre-lottery settlements for PCS licenses should be allowed, subject to disclosure rules to prevent abuse.

**III. THE COMMISSION SHOULD ADOPT A REGULATORY FRAMEWORK FOR PCS SERVICES THAT RELIES ON COMPETITION RATHER THAN COMPREHENSIVE REGULATION**

In "bring[ing] that family of services known as PCS to the public expeditiously and with the least amount of regulatory delay,"<sup>22</sup> the Commission commendably proposes to rely on competitive markets and regulatory flexibility. The Notice states, for example, that "[i]n licensing mobile services, the Commission has squarely placed its faith in competitive markets and service flexibility as the best path to provide greater

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<sup>22</sup>

Notice at ¶1.

choice and low prices for consumers. . ."<sup>23</sup> As discussed below, Telocator supports this approach, and believes that uniform regulations to provide a competitive environment and a flexible regulatory structure are critically important to realizing the benefits of PCS. Accordingly, Telocator strongly supports the basic regulatory structure identified in the Notice.

**A. The Commission Must Ensure that a Level Playing Field Exists for All PCS Providers**

It is a fundamental position of Telocator that like services should be subject to like regulation. Both the industry and the public would be best served by adopting a uniform set of regulations that apply equally to the full family of PCS, including both new offerings and existing services such as cellular. In particular, this uniform set of regulations should include the following attributes:

- Adoption of Telocator's Flexible Service Concept.<sup>24</sup> The flexible service concept provides that PCS operators should be permitted to offer both common carrier and non-common carrier services over their assigned frequencies;
- Equal Rights to Interconnection with the Public Switched Network. Telocator concurs with the Notice's proposal that PCS carriers, regardless of regulatory status, should "have a federally protected right to

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<sup>23</sup> Notice at ¶2.

<sup>24</sup> Telocator has previously discussed the application of the flexibility concept to existing PCS services. See, e.g., Petition for Rulemaking by Telocator to Amend the Commission's Rules to Authorize Cellular Carriers to Offer Auxiliary and Non-Common Carrier Services, RM-7823 (Sept. 4, 1991) ["Telocator Petition"]. Telocator urges the Commission to act expeditiously on this Petition, as discussed in the Notice at ¶49.

interconnection with the PSTN."<sup>25</sup> Telocator further believes that new PCS carriers should have interconnection that is reasonable for the particular PCS system and "no less favorable than that offered by the LEC to any other customer or carrier."<sup>26</sup>

- Flexible Regulation of Services Provided. As discussed further below, Telocator believes the Commission should limit itself to licensing, enforcement, equipment certification and the adoption of standards developed by the industry.

The foregoing policies would ensure full and fair competition for new and existing PCS service providers. If the Commission succeeds in establishing a level playing field for competitive providers of PCS, "[s]ervice providers will have a strong incentive to offer attractive services and prices because any customer will have numerous service options from which to choose."<sup>27</sup>

**B. Technical Standards for PCS Should Be Left to Industry Standards Groups**

Telocator supports the Commission's tentative conclusion that the public is best served if PCS is subject to minimal technical regulation. In addition, because "PCS concepts are still being developed" and "many PCS technologies are at their inception," "a technical framework that will permit significant

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<sup>25</sup> Notice at ¶99.

<sup>26</sup> Notice at ¶101.

<sup>27</sup> Notice at ¶94.

flexibility in the design and implementation of PCS systems, devices and services"<sup>28</sup> is clearly warranted.

The wisdom of the Commission's approach to PCS regulation has been adequately demonstrated through the cellular experience. As the Notice recognizes, the birth of cellular was a "years long process . . . [that is] one of the prime examples of how the Commission's regulatory processes can be manipulated to delay the initiation of a new service."<sup>29</sup> In part, this delay was fueled by the "initial detailed technical and compatibility standards governing the cellular service. . ."<sup>30</sup> And, although the exhaustive technical regulations for cellular "provided for a rapid and highly successful development of the service," the rules "subsequently impeded both development of new services and accommodation of the large number of additional subscribers anticipated in the future."<sup>31</sup> The cellular rules, in fact, are still undergoing modifications to provide additional flexibility critical to further development of the service.

Moreover, the PCS industry has demonstrated its ability and commitment to the timely development of technical standards necessary to the successful deployment of new PCS. Telocator and the two major U.S. standards organizations currently working on PCS related standards -- Committee T1's Telecommunications

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<sup>28</sup> Notice at ¶104.

<sup>29</sup> Notice at ¶6.

<sup>30</sup> Notice at ¶24.

<sup>31</sup> Notice at ¶24.

Subcommittee on Personal Communications Standards ("T1P1") and the Telecommunications Industry Association's Subcommittee TR45.4 on Microcell and PCS Standards -- are engaged in regular coordinating meetings to advance standards work intelligently and expeditiously.

Telocator's goal in these activities is to convey industry needs and requirements for PCS to the standards bodies and work with them in developing and delivering PCS standards consistent with industry time frames. To achieve this goal, the Telocator Technical and Engineering Committee has embarked on several activities. First, they have begun issuing documents, specifying to the standards bodies, the needs of the PCS industry for standards covering specific technical areas. The first two such documents have been completed and forwarded to the standards bodies. They define the requirements for uniform PCS end-user services and a common air (radio) interface, respectively. Additional documents of this type are in preparation, including ones dealing with network interconnection and signalling interfaces. The Technical and Engineering Committee has also produced technical reports summarizing areas of consensus it has achieved on important PCS technical matters and has forwarded them to various bodies. These have included, for example, a report on spectrum sharing technologies that have been proposed in the U.S., a report on the radio access technologies that may be candidates for adoption in the U.S., and a report on the spectrum requirements for PCS in the U.S.

Starting in 1990, the standards bodies have been steadily mounting a series of efforts to produce the necessary technical standards for PCS in the U.S. and internationally. Committee T1 has initiated work on PCS Service Standards (in T1P1) and Transmission Performance for Wireless PCS (in T1A1). The TIA TR45.4 Committee has begun work on standards for microcell/microsystem extensions to cellular networks. Both T1 and TR45.4 have initiated work on PCS air interface standards; this work has now been unified into a single standards committee (deemed the Joint Technical Committee).

In a similar cooperative effort, T1, TR45, and Telocator are co-sponsoring a special convocation of technical experts on radio interfaces and related areas (called a "Joint Experts' Meeting").<sup>32</sup> The goal of these meetings is to quickly organize the technical information currently available in this country regarding the radio environment for PCS and the radio technologies that are (or soon will be) available to be standardized for PCS. Additionally, areas needing further study will be defined so that the appropriate study efforts can be organized in the appropriate committees or industry organizations. Related work is also taking place in the IEEE's 802.11 Committee. In order to coordinate and assist the effective management of these complex efforts, representatives of the involved standards bodies have begun to meet regularly in a "Program Management Team" to assure that no known needed areas

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<sup>32</sup> See Appendix C.

are being overlooked and that related work will be properly synchronized.

Accordingly, Telocator believes the Commission should limit itself to licensing, enforcement, equipment certification and the adoption of standards developed by the industry for 2 GHz licensed PCS services. In particular, Telocator concurs with the Commission that an FCC mandated technical advisory committee is unnecessary in light of the ability of industry groups to pursue PCS standards and evidence that this work is, in fact, moving forward in the standards bodies. Furthermore, interoperability and intersystem roaming should not be required at this time and the industry should be permitted to pursue such standards as PCS technology matures and the need arises.

Telocator, further, concurs with the general direction the Commission has taken in recognizing EIA/TIA Bulletin TSB10-E as the appropriate document for addressing interference protection for private operational fixed microwave systems.<sup>33</sup> However, we do not agree with the Commission's recommendation that the current level of protection provided by Bulletin TSB10-E should be the standard. This Bulletin, in its current form, does not provide requirements, specifications, or guidelines for either fade margins or link reliability and availability objectives. The net result of this lack of specificity is a situation where fixed service link operational fade margins are substantially higher than needed to meet true reliability objectives of the

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<sup>33</sup> Notice at ¶¶ 110-113.

link. Telocator is currently working with the committee responsible for the EIA/TIA Bulletin and is confident that these issues will be successfully worked out by the industry.

Finally, Telocator believes that power and height requirements should be based upon a blanket limitation which meets RF health hazard requirements, but allows for maximum flexibility of service requirements in the 1850-1990 MHz band. In this regard, as the FCC has noted,<sup>34</sup> industry standards bodies are currently examining RF radiation considerations through IEEE C.95, and should be permitted to take the lead in developing new RF exposure guidelines.

**C. Technical Regulations for Unlicensed PCS  
Devices Should Be Left to Industry Standards  
Groups**

Telocator also supports the Commission's determination that flexibility should be granted to manufacturers of devices for operation in the unlicensed PCS band. Telocator believes that unlicensed services promise to be a significant segment of the PCS market and that a spectral etiquette<sup>35</sup> can be developed that will control interference between and among non-licensed devices. Industry groups are, in fact, engaged in the development of this

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<sup>34</sup> Notice at ¶ 131 & n.98.

<sup>35</sup> A spectral etiquette provides a set of non-discriminatory rules to allow operation of a range of devices to co-exist in the same frequency range. Such an etiquette goes beyond the scope of the current Part 15 of the Commission's rules and provides for a more detailed approach to avoiding interference.

etiquette. As in other areas of technical standards, we believe that this process should be left to industry for resolution.

We fully concur with the Commission's tentative conclusion regarding the use of digital modulation.<sup>36</sup>

Telocator recommends, however, revising the Notice's proposal for unlicensed services in two respects:

First, the channelization scheme proposed does not provide sufficient flexibility to meet the requirements of nonlicensed PCS. Dictation of the channelization scheme in the rules will, by default, influence the technical standards adopted. The industry is best suited to address technical standards issues and is currently working to develop a sharing etiquette which will likely drive those standards. Channelization of the 1910-1930 MHz band should be left flexible in order to avoid foreclosing the options available to the standards bodies in defining technical standards which meet unlicensed service market requirements.

Second, Telocator's PCS section, after exhaustive study of the issue, has concluded that, while it is possible for a spectral etiquette to prevent PCS-to-PCS interference, it is not possible for unlicensed devices to share spectrum with existing 2 GHz licensees with any guarantee against interference. Accordingly, clear spectrum is required for the deployment of unlicensed services.

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See Proposed Rule 15.253(d)(2).